

1 **WHAT IS CLAIMED IS:**

2 1. A continuous process for the the partial oxidation of a high viscosity hydrocarbon  
3 feedstream comprising:

4 (1) passing a stream of water through the central conduit of a four-stream  
5 feed injector mounted in the upper portion of a gasifier, said feed  
6 injector comprising radially spaced concentric central, second, third,  
7 and outer cylindrical conduits, and said conduits being open at their  
8 downstream exit orifices for discharge;

9 (2) simultaneously passing a high viscosity hydrocarbon feedstream  
10 through the third cylindrical conduit;

11 (3) simultaneously passing a stream of free-oxygen containing gas,  
12 optionally in admixture with a temperature moderator, through the  
13 second and outer cylindrical conduits;

14 (4) mixing said streams from (1), (2) and (3) together prior to, at, or  
15 downstream from the outer conduit exit orifice; and

16 (5) reacting the mixture from (4) in the reaction zone of the gasifier.

17 2. The process of claim 1 wherein the water is recycled gasification system water  
18 containing carbon soot from the gasifier.

19 3. The process of claim 2 wherein the velocity of the water in the feed injector is about  
20 1.0-120 feet per second.

21 4. The process of claim 1 wherein the high viscosity hydrocarbon feedstock is selected  
22 from the group consisting of virgin crude, residua from petroleum distillation and  
23 cracking, petroleum distillate, reduced crude, whole crude, asphalt, coal tar, coal  
24 derived oil, shale oil, tar sand oil, solvent deasphalting bottoms, and mixtures thereof.

25 5. The process of claim 4 wherein the high viscosity hydrocarbon feedstock has a  
26 viscosity of about 600 centipoise or greater at a temperature of 480°F (249°C).

27 6. The process of claim 4 wherein the high viscosity hydrocarbon feedstock is fed to the  
28 gasifier at a temperature between about 550°F (288°C) and 600°F (316°C).

29 7. The process of claim 4 wherein the velocity of the high viscosity hydrocarbon  
30 feedstock in the feed injector is about 10 to 120 feet per second.

